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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

		Application No.	Applicant(s)
Office Action Summary		10/720,792	RUSSELL ET AL.
		Examiner	Art Unit	
		Cam Y T. Truong	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2007*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Applicant has amended claims 1, 8, 11, 14, 19, 21, 28 and 30 in the
amendment filed on 6/21/2007.

Claims 1-32 are pending in this Office Action.

Response to Arguments

2.   Applicant's arguments filed have been fully considered but they are not
persuasive.

Applicant argued that claim 1-13 are statutory. However, Claims 1-13 are
system claims. The claims lack the necessary physical articles or objects to
constitute a machine or a manufacture within the meaning of 35 USC 101. They
are clearly not a series of steps or acts to be a process nor are they a
combination of chemical compounds to be a composition of matter. As such, they
fail to fall within a statutory category. They are, at best, functional descriptive
material *per se*.

Applicant argued that Thearling does not disclose, repetitively generating
data mining models simultaneously based on permutations in a selected input".

In response to applicant argument, the above claimed limitation is not in
claims. However, the combination of Thearling and Van Huben teaches the
claimed limitation "wherein the customized data mining models are iterative
generated in parallel based on permutations of at least one of the user data,
business parameters and a set of model generation algorithms" as following:

Thearling teaches "wherein the customized data mining models are iterative generated" as regenerate and run the models against one or more records in a database (col. 8, lines 25-30);

Van Huben teaches in parallel based on permutations of at least one of the user data, business parameters and a set of model generation algorithms" multiple models are to be built in parallel since to achieve this task the user must set up multiple Working Areas to use as model build areas (col. 158, lines 54-61). Models can be created by interactive data entry on the part of the user, by importing a text file listing all the members of the Model in a prescribed way, or by an innovative library search feature. Furthermore, an Application Program Interface allows third party tools to couple the library search mechanism with the file importing scheme to automatically create models as an extension of the process. Our preferred embodiment interacts with the Authority Manager to control who Can create models and who can promote them through the DMS. Model Create and Promote authority can be granted in a broad fashion where a user can create and move any Model in the system, or a user's authority can be restricted down to a specific library, level, version and type of data. Our Aggregation Manager lso includes utilities to delete Models, delete components of an existing Model, transfer ownership of a Model to another user, incrementally add new members to an existing Model, and view the current status of the Model (col. 87, lines 5-30). The above information shows models are created in parallel based on permutations of user data or set of model algorithms.

Thus, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Van Huben's teaching of multiple models are to be built in parallel based on permutation of set of model algorithms to Thearling's system in order to achieve this task the user must set up multiple Working Areas to use as model build areas and further provide an expedient and convenient way to search through a Data Management System for a particular type of data residing at or above a given control level. This features permits the user to quickly build large Models with hundreds or thousands of members (col. 87, lines 5-30).

In addition the combination of Thearling and Miller teaches the above claimed limitation as following:

Thearling teaches "wherein the customized data mining models are iterative generated" as regenerate and run the models against one or more records in a database (col. 8, lines 25-30);

Miller teaches in parallel based on permutations of at least one of the user data, business parameters and a set of model generation algorithms" as building models in parallel based on permutations of user data (col. 3, lines 5-25; col. 6, lines 5-65).

Thus, it would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Miller's teaching of building models in parallel to Thearling's system in order to allow data mining of large databases.

For the above reason, Examiner believed that the combination of cited

arts teaches the claimed invention.

Claim Rejections - 35 USC § 101

3.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or
> composition of matter, or any new and useful improvement thereof, may obtain a patent
> therefor, subject to the conditions and requirements of this title.

4.   Claims 1-13 are system claims. The claims lack the necessary physical
articles or objects to constitute a machine or a manufacture within the meaning of
35 USC 101. They are clearly not a series of steps or acts to be a process nor
are they a combination of chemical compounds to be a composition of matter. As
such, they fail to fall within a statutory category. They are, at best, functional
descriptive material *per se.*

Descriptive material can be characterized as either "functional descriptive
material" or "nonfunctional descriptive material." Both types of "descriptive
material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d
at 1360, 31 USPQ2d at 1759. When <u>functional</u> descriptive material is recorded
on some computer-readable medium, it becomes structurally and functionally
interrelated to the medium and will be statutory in most cases since use of
technology permits the function of the descriptive material to be realized.
Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir.
1994)

Merely claiming <u>non</u>functional descriptive material, i.e., abstract ideas, stored on
a computer-readable medium, in a computer, or on an electromagnetic carrier
signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8
(noting that the claims for an algorithm in *Benson* were unpatentable as abstract
ideas because "[t]he sole practical application of the algorithm was in connection
with the programming of a general purpose computer.").

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
> by the manner in which the invention was made.

6.   Claims 1-4, 7-9, 11-12, 14-15, 19, 21-24, 27-29 and 30-31 are rejected

under 35 U.S.C. 103(a) as being unpatentable over Thearling (US 6240411) in

view of Van Huben (US 6094654).

As to claims 1 and 21, Thearling teaches the claimed limitations:

" computerized data mining system" as (fig. 12);

" a data exploration system for receiving and analyzing user data to

provide statistical information about the user data" as an application system for

analysis and selection of stored information in a database. The database

contains records correspond to individuals, the individual's age, address, and

income. The database is provided that includes both training data and test data.

The training data is provided to a model builder 14 for computing a probability,

e.g., a probability that a customer would respond favorably to a mailing. The

above information shows that the system analyzes the customer data to provide

probability as statistical about the customer data (col. 1, lines 33-34, lines 60-65;

col. 2, lines 1-23);

"a customized model system for generating and ranking customized data mining models" as ranking models indicates that models are generated for ranking (col. 9, lines 40-43; col.13, lines 35-40), and

"for executing a selected customized data mining model on the user data" as one of the models within the query is selected for evaluation (col. 13, lines 35-36),

"wherein the customized data mining models are iterative generated" as regenerate and run the models against one or more records in a database (col. 8, lines 25-30);

"an existing model system for selecting at least one existing data mining model from a library of existing data mining models" as selecting one of the models from the model library 78 of existing models (col. 9, lines 40-43; col. 10, lines 61-62), and

"for executing the selected at least one existing data mining model in parallel on the user data" as run the model against one or more records in a database. All models are run against the entire database, which includes records about customer data. The above information shows that the selected models are executed in parallel on the customer data (col. 11, lines 19-22; col. 8, lines 25-30; col. 1, lines 40-45);

"outputing a result" as (figs. 5 &6).

Thearling does not explicitly teach the claimed limitation "in parallel based on permutations of at least one of the user data, business parameters and a set of model generation algorithms".

Van Huben teaches multiple models are to be built in parallel since to

achieve this task the user must set up multiple Working Areas to use as model

build areas (col. 158, lines 54-61).

Models can be created by interactive data entry on the part of the user, by

importing a text file listing all the members of the Model in a prescribed way,

or by an innovative library search feature.   Furthermore, an Application

Program Interface allows third party tools to couple the library search

mechanism with the file importing scheme to automatically create models as an

extension of the process.   Our preferred embodiment interacts with the

Authority Manager to control who Can create models and who can promote

them through the DMS. Model Create and Promote authority can be granted in

a broad fashion where a user can create and move any Model in the system, or

a user's authority can be restricted down to a specific library, level, version and

type of data. Our Aggregation Manager lso includes utilities to delete Models,

delete components of an existing Model, transfer ownership of a Model to

another user, incrementally add new members to an existing Model, and view

the current status of the Model (col. 87, lines 5-30). The above information

shows models are created in parallel based on permutations of user data or set

of model algorithms.

It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply Van Huben's teaching of multiple models

are to be built in parallel based on permutation of set of model algorithms to

Thearling's system in order to achieve this task the user must set up multiple

Working Areas to use as model build areas and further provide an expedient and

convenient way to search through a Data Management System for a particular

type of data residing at or above a given control level. This features permits the

user to quickly build large Models with hundreds or thousands of members (col.

87, lines 5-30).

As to claims 2 and 22, Thearling teaches the claimed limitation "a data

submission system for submitting the user data" as a database includes one or

more tables, with rows of the table corresponding to individual records. The

above information shows that the individual records had submitted to the system

for storing in a database (col. 1, lines 18-20).

"a parameter designation system for designating the business

parameters" as (col. 8, lines 25-33).

As to claim 3, Thearling teaches the claimed limitations:

"a model generation system for iteratively generating the customized data

mining models in parallel based on the permutations of at least one of the user

data, the business parameters and the set of model generation algorithms" as

regenerate and run the models against one or more records in a database in

parallel not based on permutations of at least one of the user data, business

parameters and a set of model generation algorithms (col. 8, lines 25-30);

" a model ranking system for ranking the customized data mining models based on the business parameters" as ranking models indicates that models are generated for ranking (col. 9, lines 40-43; col.13, lines 35-40),

" for identifying a predetermined quantity of the ranked customized data mining models" as a model score is greater than 0.5 that indicates the model score is identified (col. 11, lines 40-45), and "for providing comparative data corresponding to the predetermined quantity of the ranked customized data mining models" as consider a simple query that requires only the Boolean operation AND of income greater than sixty thousand dollars and a model score (col. 11, lines 40-45);

"a customized model selection system for selecting at least one customized mining model from the predetermined quantity" as the campaign manager could automatically select the order of models. The selection could be based, for example, on the anticipated computation time for scoring an individual record. Thus, those models that require less computation time may be selected before models, which require greater computation time (col. 13, lines 35-43);

"a customized model execution system for executing the selected at least one customized data mining model on the user data" as one of the models within the query is selected for evaluation (col. 13, lines 35-36).

As to claim 4, Thearling teaches the claimed limitation:

"a model library system for assembling the library of existing data mining models based on the business parameters, and for displaying the library of

existing data mining models and comparative data corresponding to the library of

existing data models" as (fig. 8, col. 9, lines 40-43; col. 10, lines 61-62) ;

"an existing model selection system for selecting the at least one existing

data mining model from the library of existing data mining models" as selecting

one of the models from the model library 78 of existing models (col. 9, lines 40-

43; col. 10, lines 61-62);

"an existing model execution system for executing the at least one existing

data mining model on the user data in parallel" as (col. 11, lines 19-22; col. 8,

lines 25-30; col. 1, lines 40-45);

a existing model comparison system for comparing results of the

execution of the at least one existing data mining model" as run the model

against one or more records in a database. All models are run against the entire

database, which includes records about customer data. The above information

shows that the selected model is executed in parallel on the customer data (col.

11, lines 19-22; col. 8, lines 25-30; col. 1, lines 40-45).

As to claim 24, is rejected under the same reason as discussed in claim

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As to claim 23 recites the same limitations as referred to claim 3.

Therefore, claim 23 is rejected under the same rational.

Claim 28 is rejected under the same reason as discussed in claim 8.

As to claims 7, 9, 27 and 29, Thearling teaches the claimed limitation

"wherein the computerized data mining system is implemented in a network

environment" as (col. 2, lines 1-10).

As to claim 8, Thearling teaches the claimed limitations:

"a model generation system for iteratively generating the customized data

mining models" as regenerate and run the models against one or more records in

a database (col. 8, lines 25-30);

"a model ranking system for ranking the customized data mining models

based on the business parameters" as ranking models indicates that models are

generated for ranking (col. 9, lines 40-43; col.13, lines 35-40),

"for identifying a predetermined quantity of the ranked customized data

mining models" as a model score is greater than 0.5 that indicates the model

score is identified (col. 11, lines 40-45), and "for providing comparative data

corresponding to the predetermined quantity of the ranked customized data

mining models" as consider a simple query that requires only the Boolean

operation AND of income greater than sixty thousand dollars and a model score

(col. 11, lines 40-45);

" for providing comparative data corresponding to the predetermined

quantity of the ranked customized data mining models" as regenerate and run

the models against one or more records in a database in parallel not based on

permutations of at least one of the user data, business parameters and a set of

model generation algorithms (col. 8, lines 25-30);

"a customized model selection system for selecting at least one

customized mining model of the customized data mining models" as regenerate

and run the models against one or more records in a database in parallel not

based on permutations of at least one of the user data, business parameters and

a set of model generation algorithms (col. 8, lines 25-30);

"a customized model execution system for executing the selected at least

one customized data mining model on the user data" as selecting one of the

models from the model library 78 of existing models (col. 9, lines 40-43; col. 10,

lines 61-62),

"outputting a result" as (figs. 5&6),

"for executing the selected at least one existing data mining model in

parallel on the user data" as run the model against one or more records in a

database. All models are run against the entire database, which includes

records about customer data. The above information shows that the selected

models are executed in parallel on the customer data (col. 11, lines 19-22; col. 8,

lines 25-30; col. 1, lines 40-45).

Thearling does not explicitly teach the claimed limitation "in parallel based

on permutations of at least one of the user data, business parameters and a set

of model generation algorithms".

Van Huben teaches multiple models are to be built in parallel since to

achieve this task the user must set up multiple Working Areas to use as model

build areas (col. 158, lines 54-61).

Models can be created by interactive data entry on the part of the user, by

importing a text file listing all the members of the Model in a prescribed way, or by an innovative library search feature. Furthermore, an Application Program Interface allows third party tools to couple the library search mechanism with the file importing scheme to automatically create models as an extension of the process. Our preferred embodiment interacts with the Authority Manager to control who Can create models and who can promote them through the DMS. Model Create and Promote authority can be granted in a broad fashion where a user can create and move any Model in the system, or a user's authority can be restricted down to a specific library, level, version and type of data. Our Aggregation Manager Iso includes utilities to delete Models, delete components of an existing Model, transfer ownership of a Model to another user, incrementally add new members to an existing Model, and view the current status of the Model (col. 87, lines 5-30). The above information shows models are created in parallel based on permutations of user data or set of model algorithms.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Van Huben's teaching of multiple models are to be built in parallel based on permutation of set of model algorithms to Thearling's system in order to achieve this task the user must set up multiple Working Areas to use as model build areas and further provide an expedient and convenient way to search through a Data Management System for a particular type of data residing at or above a given control level. This features permits the

user to quickly build large Models with hundreds or thousands of members (col. 87, lines 5-30).

As to claim 14, Thearling teaches the claimed limitations:

"providing user data and business parameters" as a database includes one or more tables, with rows of the table corresponding to individual records. The above information shows that the individual records had submitted to the system for storing in a database (col. 1, lines 18-20);

"iteratively generating a plurality of customized data mining models" as regenerate and run the models against one or more records in a database (col. 8, lines 25-30);

"ranking the plurality of customized data mining models based on the business parameters" as ranking models indicates that models are generated for ranking (col. 9, lines 40-43; col.13, lines 35-40), and;

"selecting at least one customized data mining model from the ranked plurality of customized data mining models"; a as selecting one of the models from the model library 78 of existing models (col. 9, lines 40-43; col. 10, lines 61-62), and

"executing the selected at least one customized data mining model on the user data" as run the model against one or more records in a database. All models are run against the entire database, which includes records about customer data. The above information shows that the selected models are

executed in parallel on the customer data (col. 11, lines 19-22; col. 8, lines 25-30;

col. 1, lines 40-45),

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel based

on permutations of at least one of the user data, business parameters and a set

of model generation algorithms".

Van Huben teaches multiple models are to be built in parallel since to

achieve this task the user must set up multiple Working Areas to use as model

build areas (col. 158, lines 54-61).

Models can be created by interactive data entry on the part of the user, by

importing a text file listing all the members of the Model in a prescribed way,

or by an innovative library search feature.   Furthermore, an Application

Program Interface allows third party tools to couple the library search

mechanism with the file importing scheme to automatically create models as an

extension of the process.   Our preferred embodiment interacts with the

Authority Manager to control who Can create models and who can promote

them through the DMS. Model Create and Promote authority can be granted in

a broad fashion where a user can create and move any Model in the system, or

a user's authority can be restricted down to a specific library, level, version and

type of data. Our Aggregation Manager lso includes utilities to delete Models,

delete components of an existing Model, transfer ownership of a Model to

another user, incrementally add new members to an existing Model, and view

the current status of the Model (col. 87, lines 5-30). The above information

shows models are created in parallel based on permutations of user data or set

of model algorithms.

It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply Van Huben's teaching of multiple models

are to be built in parallel based on permutation of set of model algorithms to

Thearling's system in order to achieve this task the user must set up multiple

Working Areas to use as model build areas and further provide an expedient and

convenient way to search through a Data Management System for a particular

type of data residing at or above a given control level. This features permits the

user to quickly build large Models with hundreds or thousands of members (col.

87, lines 5-30).

As to claim 15, Thearling teaches the claimed limitation "identifying a

predetermined quantity of the ranked plurality of customized data mining models"

as a model score is greater than 0.5 that indicates the model score is identified

(col. 11, lines 40-45),

"providing comparative data corresponding to the predetermined quantity

of the ranked plurality of customized data mining models, prior to the selecting

step" as consider a simple query that requires only the Boolean operation AND

of income greater than sixty thousand dollars and a model score (col. 11, lines

40-45).

7.   Claims 5, 10, 18, 25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Thearling (US 6240411) in view of Van Huben (US 6094654).

and further in view of Mani et al (or hereinafter "Mani") (US 6677963) and

Hofmann (US 6687696).

        As to claims 5, 10, 18, 25, Thearling teaches the claimed limitation "a set

of model goals" as (fig. 10D). Thearling does not explicitly teach the claimed

limitation "wherein the business parameters comprise a business taxonomy, a

set of business problems"

        Mani teaches business problems (col. 3, lines 65-67). Hofmann teaches

the automatic categorization of documents categorizes the data into existing

taxonomies (col. 17, lines 15-20).

        It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply Mani's teaching of business problem and

Hofmann's teaching of automatic categorization of documents categorizes the

data into existing taxonomies to Thearling's system in order to provide a set of

categories of models along with the relevant document information or business

problem so that a user can view/search the models easily in order.

Claims 6, 17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Thearling (US 6240411) in view of Van Huben (US 6094654) further in view

of Miller (US 6553366) (or hereinafter "Miller66").

As to claims 6, 17 and 26, Thearling does not explicitly teach the claimed limitation " wherein the statistical information comprises data relationships, data outliners, invalid data values and standard deviations". Miller66 teaches statistical information includes relationships and standard deviations (col 7, lines 55-67).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Miller66's teaching of statistical information includes relationships and standard deviations to Thearling's system in order to perform data mining applications in a massively parallel relational database management system.

8.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thearling (US 6240411) in view of Van Huben (US 6094654) and further in view of King Jr et al (or hereinafter "King") (US 20020042731).

As to claim 16, Thearling does not explicitly teach the claimed limitation "iteratively generating a plurality of customized data mining models in a grid environment based on the multiple permutations" as does not explicitly teach the claimed limitation "forming multiple permutations of at least one of the user data, the business parameters and the set of model generation algorithms; and".

King teaches Business strength may also depend on multiple factors, such as market position, margin, technology position, size, growth potential,

environmental record, etc. The two axes, each divided into three gradations,

define nine different permutations of

criteria within the grid itself. As such, the GE model is also referred to as

a 9-Blocker tool (or in a more general case, a multi-blocker tool) (paragraph

[0116]).

It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply King's teaching of Business strength may

also depend on multiple factors, such as market position, margin, technology

position, size, growth potential, environmental record, etc. The two axes, each

divided into three gradations, define nine different permutations of criteria within

the grid itself. As such, the GE model is also referred to as a 9-Blocker tool to

Thearling's system in order to provide a correct model corresponding to

business problem.

As to claim 11,Thearling teaches the claimed limitations:

"a model library system for assembling a library of existing data mining

models based on a business parameters and for displaying the library of existing

data mining models and comparative data corresponding to the library of existing

data models" as executing models in the library based on the business

parameters (fig. 8; col. 9, lines 40-45);

"and existing model selection system for selecting a plurality of existing

data mining models from the library of existing data mining models" as displaying

modes and comparing data corresponding to modes (fig. 8);

"an existing model execution system for executing the plurality of existing

data mining models on the user data in parallel" as run the model against one or

more records in a database. All models are run against the entire database,

which includes records about customer data. The above information shows that

the selected models are not executed in parallel on the customer data (col. 11,

lines 19-22; col. 8, lines 25-30; col. 1, lines 40-45).; and

" an existing model comparing system for comparing results of the

execution of the at least one existing data mining model" as consider a simple

query that requires only the Boolean operation AND of income greater than sixty

thousand dollars and a model score (col. 11, lines 40-45),

"wherein the existing data mining models have been iteratively generated"

as (col. 8, lines 15-25)

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel, in

parallel".

Thearling does not explicitly teach the claimed limitation "in parallel based

on permutations of at least one of the user data, business parameters and a set

of model generation algorithms".

Van Huben teaches multiple models are to be built in parallel since to

achieve this task the user must set up multiple Working Areas to use as model

build areas (col. 158, lines 54-61).

Models can be created by interactive data entry on the part of the user, by

importing a text file listing all the members of the Model in a prescribed way,

or by an innovative library search feature.   Furthermore, an Application

Program Interface allows third party tools to couple the library search

mechanism with the file importing scheme to automatically create models as an

extension of the process.   Our preferred embodiment interacts with the

Authority Manager to control who Can create models and who can promote

them through the DMS. Model Create and Promote authority can be granted in

a broad fashion where a user can create and move any Model in the system, or

a user's authority can be restricted down to a specific library, level, version and

type of data. Our Aggregation Manager lso includes utilities to delete Models,

delete components of an existing Model, transfer ownership of a Model to

another user, incrementally add new members to an existing Model, and view

the current status of the Model (col. 87, lines 5-30). The above information

shows models are created in parallel based on permutations of user data or set

of model algorithms.

It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply Van Huben's teaching of multiple models

are to be built in parallel based on permutation of set of model algorithms to

Thearling's system in order to achieve this task the user must set up multiple

Working Areas to use as model build areas and further provide an expedient and

convenient way to search through a Data Management System for a particular

type of data residing at or above a given control level. This features permits the

user to quickly build large Models with hundreds or thousands of members (col.

87, lines 5-30) and further to quickly and easily provide the results of one or more

process models to line operators and process engineers during the

manufacturing process, allowing the process engineer or line operator to more

readily understand and adjust the manufacturing process.

A to claim 19, Thearling teaches the claimed limitations:

"providing user data and business parameters" as providing a database

and other parameters as business parameters (col.1, lines 60-65; col. 2, lines 12-

20);

" displaying the library of existing data mining models and comparative

data corresponding to the library of data mining models" as displaying modes

and comparing data corresponding to modes (fig. 8);

assembling a library of existing data mining models based on the business

parameters" as executing models in the library based on the business

parameters (col. 9, lines 40-45);

"selecting a plurality of existing data mining model from the library of

existing data mining models" as one of the models within the query is selected for

evaluation (col. 13, lines 35-36),

" executing the plurality of existing data mining model on the user data in

parallel" as run the model against one or more records in a database. All models

are run against the entire database, which includes records about customer data.

The above information shows that the selected models are not executed in

parallel on the customer data (col. 11, lines 19-22; col. 8, lines 25-30; col. 1, lines

40-45).; and

" comparing results of the execution of the at least one existing data

mining model" as consider a simple query that requires only the Boolean

operation AND of income greater than sixty thousand dollars and a model score

(col. 11, lines 40-45),

"wherein the existing data mining models have been iteratively generated"

as (col. 8, lines 25-30),

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel".

Van Huben teaches multiple models are to be built in parallel since to

achieve this task the user must set up multiple Working Areas to use as model

build areas (col. 158, lines 54-61).

Models can be created by interactive data entry on the part of the user,

by importing a text file listing all the members of the Model in a prescribed way,

or by an innovative library search feature. Furthermore, an Application

Program Interface allows third party tools to couple the library search

mechanism with the file importing scheme to automatically create models as an

extension of the process. Our preferred embodiment interacts with the

Authority Manager to control who Can create models and who can promote

them through the DMS. Model Create and Promote authority can be granted in

a broad fashion where a user can create and move any Model in the system, or

a user's authority can be restricted down to a specific library, level, version and

type of data. Our Aggregation Manager lso includes utilities to delete Models,

delete components of an existing Model, transfer ownership of a Model to

another user, incrementally add new members to an existing Model, and view

the current status of the Model (col. 87, lines 5-30). The above information

shows models are created in parallel based on permutations of user data or set

of model algorithms.

It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply Van Huben's teaching of multiple models

are to be built in parallel based on permutation of set of model algorithms to

Thearling's system in order to achieve this task the user must set up multiple

Working Areas to use as model build areas and further provide an expedient and

convenient way to search through a Data Management System for a particular

type of data residing at or above a given control level. This features permits the

user to quickly build large Models with hundreds or thousands of members (col.

87, lines 5-30).

Claim 30 is rejected under the same reason as discussed in claims 11

and 19.

As to claims 12 and 31, Thearling teaches the claimed limitation "wherein the at least one existing data mining model is executed on the user data in a grid environment" as (fig. 8).

10.   Claims 13, 20 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thearling (US 6240411) in view of Van Huben and further in view of Mani et al (or hereinafter "Mani") (US 6677963) and Hofmann (US 6687696).

As to claims 13, 20 and 32, Thearling teaches the claimed limitation "a set of model goals" as (fig. 10D). Thearling does not explicitly teach the claimed limitation "wherein the business parameters comprise a business taxonomy, a set of business problems"

Mani teaches business problems (col. 3, lines 65-67). Hofmann teaches the automatic categorization of documents categorizes the data into existing taxonomies (col. 17, lines 15-20).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Mani's teaching of business problem and Hofmann's teaching of automatic categorization of documents categorizes the data into existing taxonomies to Thearling's system in order to provide a set of categories of models along with the relevant document information or business problem so that a user can view/search the models easily in order.

9.   Claims 1-4, 7-9, 11-12, 14-15, 19, 21-24, 27-31 are rejected under 35

U.S.C. 103(a) as being unpatentable over Thearling (US 6240411) in view of

Miller (US 6826556).

As to claims 1 and 21, Thearling teaches the claimed limitations:

" computerized data mining system" as (fig. 12);

" a data exploration system for receiving and analyzing user data to

provide statistical information about the user data" as an application system for

analysis and selection of stored information in a database. The database

contains records correspond to individuals, the individual's age, address, and

income. The database is provided that includes both training data and test data.

The training data is provided to a model builder 14 for computing a probability,

e.g., a probability that a customer would respond favorably to a mailing. The

above information shows that the system analyzes the customer data to provide

probability as statistical about the customer data (col. 1, lines 33-34, lines 60-65;

col. 2, lines 1-23);

"a customized model system for generating and ranking customized data

mining models" as ranking models indicates that models are generated for

ranking (col. 9, lines 40-43; col.13, lines 35-40), and

"for executing a selected customized data mining model on the user data"

as one of the models within the query is selected for evaluation (col. 13, lines 35-

36),

"wherein the customized data mining models are iteratively generated" as

regenerate and run the models against one or more records in a database (col.

8, lines 25-30);

"an existing model system for selecting at least one existing data mining

model from a library of existing data mining models" as selecting one of the

models from the model library 78 of existing models (col. 9, lines 40-43; col. 10,

lines 61-62), and

"for executing the selected at least one existing data mining model in

parallel on the user data" as run the model against one or more records in a

database. All models are run against the entire database, which includes

records about customer data. The above information shows that the selected

models are not executed in parallel on the customer data (col. 11, lines 19-22;

col. 8, lines 25-30; col. 1, lines 40-45),

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel based

on permutations of at least one of the user data, business parameters and a set

of model generation algorithms".

Miller teaches building models in parallel based on permutations of user

data (col. 3, lines 5-25; col. 6, lines 5-65).

It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply Miller's teaching of building models in

parallel to Thearling's system in order to allow data mining of large databases.

As to claims 2 and 22, Thearling teaches the claimed limitation "a data

submission system for submitting the user data" as a database includes one or

more tables, with rows of the table corresponding to individual records. The

above information shows that the individual records had submitted to the system

for storing in a database (col. 1, lines 18-20).

"a parameter designation system for designating the business

parameters" as (fig. 7).

As to claim 3, Thearling teaches the claimed limitations:

"a model generation system for iteratively generating the customized data

mining models in parallel based on the permutations of at least one of the user

data, the business parameters and the set of model generation algorithms" as

regenerate and run the models against one or more records in a database in

parallel not based on permutations of at least one of the user data, business

parameters and a set of model generation algorithms (col. 8, lines 25-30);

" a model ranking system for ranking the customized data mining models

based on the business parameters" as ranking models indicates that models are

generated for ranking (col. 9, lines 40-43; col.13, lines 35-40),

" for identifying a predetermined quantity of the ranked customized data

mining models" as a model score is greater than 0.5 that indicates the model

score is identified (col. 11, lines 40-45), and "for providing comparative data

corresponding to the predetermined quantity of the ranked customized data

mining models" as consider a simple query that requires only the Boolean

operation AND of income greater than sixty thousand dollars and a model score

(col. 11, lines 40-45);

"a customized model selection system for selecting at least one

customized mining model from the predetermined quantity" as the campaign

manager could automatically select the order of models. The selection could be

based, for example, on the anticipated computation time for scoring an individual

record. Thus, those models that require less computation time may be selected

before models, which require greater computation time (col. 13, lines 35-43);

"a customized model execution system for executing the selected at least

one customized data mining model on the user data" as one of the models within

the query is selected for evaluation (col. 13, lines 35-36).

As to claim 4, Thearling teaches the claimed limitation:

"a model library system for assembling the library of existing data mining

models based on the business parameters, and for displaying the library of

existing data mining models and comparative data corresponding to the library of

existing data models" as (fig. 8, col. 9, lines 40-43; col. 10, lines 61-62) ;

"an existing model selection system for selecting the at least one existing

data mining model from the library of existing data mining models" as selecting

one of the models from the model library 78 of existing models (col. 9, lines 40-

43; col. 10, lines 61-62);

"an existing model execution system for executing the at least one existing

data mining model on the user data in parallel" as (col. 11, lines 19-22; col. 8,

lines 25-30; col. 1, lines 40-45);

a existing model comparison system for comparing results of the

execution of the at least one existing data mining model" as run the model

against one or more records in a database. All models are run against the entire

database, which includes records about customer data. The above information

shows that the selected model is executed in parallel on the customer data (col.

11, lines 19-22; col. 8, lines 25-30; col. 1, lines 40-45).

Claim 24 is rejected under the same reason as discussed in claim 4

Claim 23 is rejected under the same reason as discussed in claim 3.

Claim 28 is rejected under the same reason as discussed in claim 8.

As to claims 7, 9, 27 and 29, Thearling teaches the claimed limitation

"wherein the computerized data mining system is implemented in a network

environment" as (col. 2, lines 1-10).

As to claim 8, Thearling teaches the claimed limitations:

"a model generation system for iteratively generating the customized data

mining models in parallel based on the permutations of at least one of user data,

business parameters and a set of model generation algorithms" as regenerate

and run the models against one or more records in a database based on

permutations of at least one of the user data, business parameters and a set of model generation algorithms; ; however, no in parallel (col. 8, lines 25-30);

"a model ranking system for ranking the customized data mining models based on the business parameters" as ranking models indicates that models are generated for ranking (col. 9, lines 40-43; col.13, lines 35-40),

"for identifying a predetermined quantity of the ranked customized data mining models" as a model score is greater than 0.5 that indicates the model score is identified (col. 11, lines 40-45), and "for providing comparative data corresponding to the predetermined quantity of the ranked customized data mining models" as consider a simple query that requires only the Boolean operation AND of income greater than sixty thousand dollars and a model score (col. 11, lines 40-45);

" for providing comparative data corresponding to the predetermined quantity of the ranked customized data mining models" as regenerate and run the models against one or more records in a database based on permutations of at least one of the user data, business parameters and a set of model generation algorithms but not in parallel (col. 8, lines 25-30);

"a customized model selection system for selecting at least one customized mining model of the customized data mining models" as regenerate and run the models against one or more records in a database in parallel based on permutations of at least one of the user data, business parameters and a set of model generation algorithms (col. 8, lines 25-30);

"a customized model execution system for executing the selected at least one customized data mining model on the user data" as selecting one of the models from the model library 78 of existing models (col. 9, lines 40-43; col. 10, lines 61-62), and

"for executing the selected at least one existing data mining model" as run the model against one or more records in a database. All models are run against the entire database, which includes records about customer data. The above information shows that the selected models are executed in parallel on the customer data (col. 11, lines 19-22; col. 8, lines 25-30; col. 1, lines 40-45).

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel based on user data".

Miller teaches building models in parallel based on permutations of user data (col. 3, lines 5-25; col. 6, lines 5-65).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Miller's teaching of building models in parallel to Thearling's system in order to allow data mining of large databases.

As to claim 11,Thearling teaches the claimed limitations:

"a model library system for assembling a library of existing data mining models based on a business parameters and for displaying the library of existing data mining models and comparative data corresponding to the library of existing

data models" as executing models in the library based on the business

parameters (fig. 8; col. 9, lines 40-45);

"wherein the existing data mining models have been iteratively generated"

as (col. 8, lines 25-30),

"and existing model selection system for selecting a plurality of existing

data mining models from the library of existing data mining models" as displaying

modes and comparing data corresponding to modes (fig. 8);

"an existing model execution system for executing the plurality of existing

data mining models on the user data in parallel" as run the model against one or

more records in a database. All models are run against the entire database,

which includes records about customer data. The above information shows that

the selected models are not executed in parallel on the customer data (col. 11,

lines 19-22; col. 8, lines 25-30; col. 1, lines 40-45);

" an existing model comparing system for comparing results of the

execution of the at least one existing data mining model" as consider a simple

query that requires only the Boolean operation AND of income greater than sixty

thousand dollars and a model score (col. 11, lines 40-45).

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel".

Miller teaches building models in parallel based on permutations of user

data (col. 3, lines 5-25; col. 6, lines 5-65).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Miller's teaching of building models in parallel to Thearling's system in order to allow data mining of large databases.

As to claims 12 and 31, Thearling teaches the claimed limitation "wherein the at least one existing data mining model is executed on the user data in a grid environment" as (fig. 8).

As to claim 14, Thearling teaches the claimed limitations:

"providing user data and business parameters" as a database includes one or more tables, with rows of the table corresponding to individual records. The above information shows that the individual records had submitted to the system for storing in a database (col. 1, lines 18-20);

"iteratively generating a plurality of customized data mining models in parallel based on permutations of at least one of the user data, the business parameters and a set of model generation algorithms" as regenerate and run the models against one or more records in a database based on permutations of at least one of the user data, business parameters and a set of model generation algorithms; however, not in parallel (col. 8, lines 25-30);

"ranking the plurality of customized data mining models based on the business parameters" as ranking models indicates that models are generated for ranking (col. 9, lines 40-43; col.13, lines 35-40), and;

"selecting at least one customized data mining model from the ranked

plurality of customized data mining models"; a as selecting one of the models

from the model library 78 of existing models (col. 9, lines 40-43; col. 10, lines 61-

62), and

"executing the selected at least one customized data mining model on the

user data" as run the model against one or more records in a database. All

models are run against the entire database, which includes records about

customer data. The above information shows that the selected models are

executed in parallel on the customer data (col. 11, lines 19-22; col. 8, lines 25-30;

col. 1, lines 40-45),

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel".

Miller teaches building models in parallel (col. 3, lines 5-25).

It would have been obvious to a person of an ordinary skill in the art at the

time the invention was made to apply Miller's teaching of building models in

parallel to Thearling's system in order to allow data mining of large databases.

As to claim 15, Thearling teaches the claimed limitation "identifying a

predetermined quantity of the ranked plurality of customized data mining models"

as a model score is greater than 0.5 that indicates the model score is identified

(col. 11, lines 40-45),

"providing comparative data corresponding to the predetermined quantity

of the ranked plurality of customized data mining models, prior to the selecting

step" as consider a simple query that requires only the Boolean operation AND

of income greater than sixty thousand dollars and a model score (col. 11, lines

40-45).

A to claim 19, Thearling teaches the claimed limitations:

"providing user data and business parameters" as providing a database

and other parameters as business parameters (col.1, lines 60-65; col. 2, lines 12-

20);

" displaying the library of existing data mining models and comparative

data corresponding to the library of data mining models" as displaying modes

and comparing data corresponding to modes (fig. 8);

assembling a library of existing data mining models based on the business

parameters" as executing models in the library based on the business

parameters (col. 9, lines 40-45);

"selecting a plurality of existing data mining model from the library of

existing data mining models" as one of the models within the query is selected for

evaluation (col. 13, lines 35-36),

" executing the plurality of existing data mining model on the user data in

parallel" as run the model against one or more records in a database. All models

are run against the entire database, which includes records about customer data.

The above information shows that the selected models are not executed in

parallel on the customer data (col. 11, lines 19-22; col. 8, lines 25-30; col. 1, lines 40-45).; and

" comparing results of the execution of the at least one existing data mining model" as consider a simple query that requires only the Boolean operation AND of income greater than sixty thousand dollars and a model score (col. 11, lines 40-45),

"wherein the existing data mining models have been iteratively generated" as (col. 8, lines 25-30),

"outputting a result" as (figs. 5&6).

Thearling does not explicitly teach the claimed limitation "in parallel".

Miller teaches building models in parallel based on permutations of user data (col. 3, lines 5-25; col. 6, lines 5-65).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Miller's teaching of building models in parallel to Thearling's system in order to allow data mining of large databases.

Claim 30 is rejected under the same reason as discussed in claims 11 and 19.

10.   Claims 5, 10, 13, 18, 20, 25 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thearling (US 6240411) in view of Miller (US 6826556)and further in view of Mani et al (or hereinafter "Mani") (US 6677963) and Hofmann (US 6687696).

As to claims 5, 10, 13, 18, 20, 25 and 32, Thearling teaches the claimed limitation "a set of model goals" as (fig. 10D). Thearling does not explicitly teach the claimed limitation "wherein the business parameters comprise a business taxonomy, a set of business problems"

Mani teaches business problems (col. 3, lines 65-67). Hofmann teaches the automatic categorization of documents categorizes the data into existing taxonomies (col. 17, lines 15-20).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Mani's teaching of business problem and Hofmann's teaching of automatic categorization of documents categorizes the data into existing taxonomies to Thearling's system in order to provide a set of categories of models along with the relevant document information or business problem so that a user can view/search the models easily in order.

11.   Claims 6, 17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thearling (US 6240411) in view of Miller (US 6826556) and further in view of Miller (US 6553366) (or hereinafter "Miller66").

As to claims 6, 17 and 26, Thearling does not explicitly teach the claimed limitation " wherein the statistical information comprises data relationships, data outliners, invalid data values and standard deviations". Miller66 teaches statistical information includes relationships and standard deviations (col 7, lines 55-67).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Miller66's teaching of statistical information includes relationships and standard deviations to Thearling's system in order to perform data mining applications in a massively parallel relational database management system.

12.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thearling (US 6240411) in view of Miller (US 6826556)and further in view of King Jr et al (or hereinafter "King") (US 20020042731).

As to claim 16, Thearling does not explicitly teach the claimed limitation "iteratively generating a plurality of customized data mining models in a grid environment based on the multiple permutations" as does not explicitly teach the claimed limitation "forming multiple permutations of at least one of the user data, the business parameters and the set of model generation algorithms; and". King teaches Business strength may also depend on multiple factors, such as market position, margin, technology position, size, growth potential, environmental record, etc. The two axes, each divided into three gradations, define nine different permutations of criteria within the grid itself. As such, the GE model is also referred to as a 9-Blocker tool (or in a more general case, a multi-blocker tool) (paragraph [0116]).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply King's teaching of Business strength may

also depend on multiple factors, such as market position, margin, technology

position, size, growth potential, environmental record, etc. The two axes, each

divided into three gradations, define nine different permutations of criteria within

the grid itself. As such, the GE model is also referred to as a 9-Blocker tool to

Thearling's system in order to provide a correct model corresponding to

business problem.

Conclusion

13.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of

time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Contact Information

14.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Cam Y T. Truong whose telephone number is

(571) 272-4042. The examiner can normally be reached on Monday to Firday.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax

phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

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direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free).

Cam Y Truong
Primary Examiner
Art Unit 2162